



CITY OF HAYWARD AGENDA REPORT

AGENDA DATE 11/10/98

AGENDA ITEM

WORK SESSION ITEM

6

TO: Mayor and City Council
FROM: Director of Public Works
SUBJECT: **Selection of Hesperian Boulevard/Aldengate Way Traffic Improvement Alternative**

Recommendation:

It is recommended that the City Council authorize the installation of a traffic signal (full signalization) at **Hesperian Boulevard** and Aldengate Way,

Background:

Over the last few years, concerns have been raised about an excessive number of accidents at Hesperian Boulevard and Aldengate Way. Exhibit A is a vicinity map showing the intersection as well as streets in the nearby area. City staff evaluated this intersection in connection with the biannual update of the Traffic Signal Priority List. The conclusion was that this intersection was rated number one in terms of accidents among all of the intersections studied. Partially as a result of this high accident score, the City received approval for a federal Hazard Elimination Safety grant of \$150,000 for the design and installation of a traffic signal. The project is included in the adopted 1998/99 Capital Improvement Program.

Concurrent with the City's evaluation, neighborhood-planning efforts were underway. These efforts resulted in the adoption of neighborhood plans with diametrically opposite recommendations regarding this intersection.

The Glen Eden Neighborhood Plan, adopted by the City Council on October 1, 1996, included a strategy to "pursue funding for the installation of traffic signals at Hesperian and Aldengate." This location was the first priority of the Glen Eden Task Force. The Southgate Neighborhood Plan, also adopted by the City Council on October 1, 1996, included a policy to "ensure that a traffic signal at Aldengate and Hesperian is not installed." As adopted by Council, both of these conflicting strategies indicated that action was "deferred pending further consideration as part of the Circulation Element Update." Although the Circulation Update was adopted by the City Council in January 1998, it did not speak to this issue. During consideration of the 1998/99 Capital Improvement Program, staff indicated that the intersection would be fully analyzed and the results taken back to the community during design in order to resolve the conflict.

Discussion:

City staff contracted with the firm of TJKM Transportation Consultants to develop alternatives, both signalized and non-signalized, for addressing the safety and circulation issues at this intersection. As part of their analysis, TJKM developed new traffic counts, which are shown in Exhibit B. Consequently, TJKM developed the following alternatives.

- Alternative #1: Signalization of all movements
- Alternative #2: Signalizing only the Hesperian **northbound/Hesperian** southbound left turn
- Alternative #3: Creation of a refuge area for westbound Aldengate Way left turns
- Alternative #4: **Left** turn prohibition for westbound Aldengate Way
- Alternative #5: Staggered limit line for northbound Hesperian Boulevard
- Alternative #6: Peak-hour left-turn prohibition for southbound Hesperian Boulevard

Only Alternatives 1 and 2 involve the installation of a traffic signal. All alternatives are more fully described in Exhibit C.

A comparison of the advantages and disadvantages of each alternative is shown below.

Table1
Summary of "Pros and Cons" of Various Alternatives

Potential Results	PROS			CONS	
	Reduces WB accidents	Reduces SB Left/NB accidents	Reduces delay for WB LT	Diverts traffic to other streets	Requires more police enforcement
Signalized alternatives					
#1 - All movements	X	X	X		
#2 - NB/SB only	X	X		X	
Non-signalized alternatives					
#3 - Refuge Area	X		X		
#4 - No WB LT	X			X	
#5 - Limit Line		X			
#6 - No peak hour SB LT		X		X	X

TJKM concluded that although the non-signalized alternatives would be useful in reducing accidents, they would not be as effective as many of the signalized alternatives.

TJKM discussed the alternatives at a public meeting on October 21, 1998, at Mt. Eden High School. The meeting was attended by representatives of both the Glen Eden and Southgate Neighborhood Task Forces, as well as the Lauderdale Avenue residents who were involved in the guardrail issue, and representatives of one area business. Glen Eden representatives reiterated their desire for a signal in the hope it would eliminate accidents. Southgate representatives repeated their concerns about the effect of traffic signals upon the flow of Hesperian traffic. Additionally, the impact of traffic diversion on neighborhoods and area businesses was also discussed.

In response to the concerns about the impact on Hesperian Boulevard traffic, TJKM presented a computer simulation of the traffic patterns that would occur under each of the alternatives. Actual traffic counts and signal-timings were incorporated into the simulation. The simulation was able to demonstrate that signalization of the Hesperian and Aldengate intersection would have no negative impact on traffic flow and would reduce the propensity for accidents at the intersection. This simulation will also be demonstrated for the Council as part of staff's presentation.

The simulation seemed to allay the concerns of most of those opposed to the signal. As a result, there appeared to be a general consensus that the City should move forward with the

installation of a traffic signal at this intersection. Staff, therefore, recommends that the Council approve selection of Alternative 1 (full signalization) for design of the intersection improvements.

Project Cost:

The estimated project costs, assuming Council approval of Alternative 1, is as follows:

Design and Administration	\$ 25,000
Construction (assuming Alternative 1)	110,000
Construction Engineering and Inspection	<u>15,000</u>
	\$ 150,000

Funding:

The adopted 1998/99 Capital Improvement Budget includes \$150,000 in the Transportation System Improvement Fund. Total costs will be reimbursed from a federal Hazard Elimination Safety grant.

Schedule:

Start of Traffic Signal Design	November 12, 1998
Advertise	January 5, 1999
Open Bids	February 9, 1999
Award	March 2, 1999
Begin construction	April 1, 1999
Construction complete	July 1, 1999

Another consideration of the schedule involves the requirement for a timely use of federal funds. Originally, the funds were to have been obligated by September 30, 1998. However, City staff requested an extension to December 31, 1998. Given the above time frame and the lead time required to advertise, accept bids, and award a contract, the December 31, 1998, deadline is not practical. Therefore, staff has requested another extension to March 31, 1999. As of this date, the extension has not been granted.

Prepared by:



Robert A. Bauman, Deputy Director of Public Works

Recommended by:



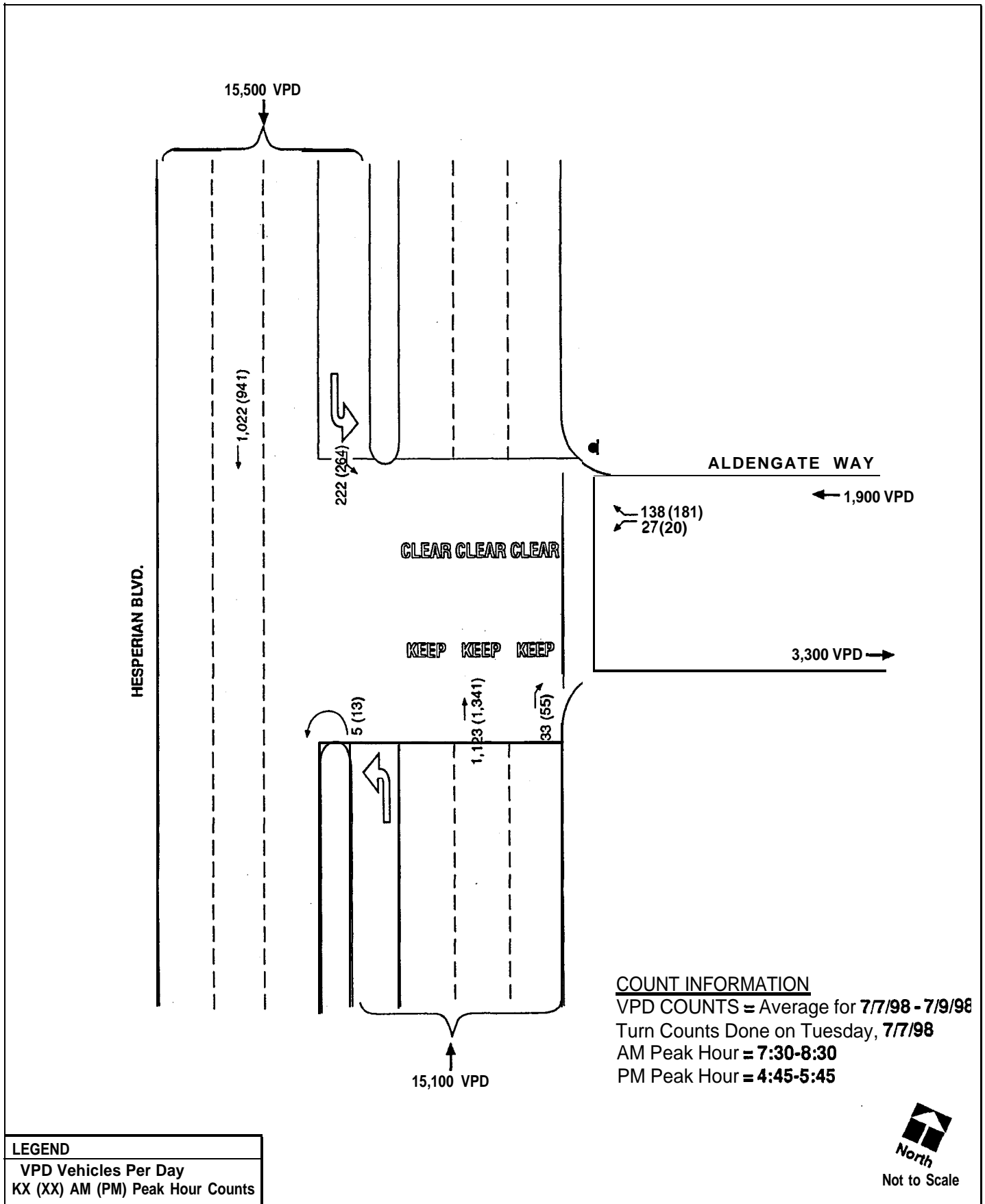
Dennis L. Butler, Director of Public Works

Approved by:



Jesus Armas, City Manager

Attachments: Exhibit A: Vicinity Map
Exhibit B: Peak-Hour and Daily Traffic Volumes
Exhibit C: Discussion of Alternatives



City of Hayward
 Hesperian Blvd./Aldengate Way Traffic Control Study
Peak Hour and Daily Traffic Volumes

Figure



DISCUSSION OF ALTERNATIVES

ALTERNATIVE #1: SIGNALIZATION OF ALL MOVEMENTS (PAGE C3):

This alternative involves signalizing all movements at the intersection of Hesperian and Aldengate, and would require the following five phases:

- Hesperian southbound left turn (protected)
- Hesperian northbound U-turn (protected)
- Hesperian northbound through
- Hesperian southbound through
- Aldengate westbound right and left turn

ALTERNATIVE #2: HESPERIAN NORTHBOUND/HESPERIAN SOUTHBOUND LEFT TURN (PAGE C4):

This alternative involves just signalizing the Hesperian Boulevard northbound and southbound left turns, and therefore, would require the physical prohibition of left turns from westbound Aldengate Way. The westbound Aldengate right turns would be controlled by a STOP sign. Four vehicular phases would be required:

- Hesperian southbound left turn (protected)
- Hesperian northbound U-turn (protected)
- Hesperian northbound through
- Hesperian southbound through (constant green)

The consultant's analysis indicates that the intersection could be signalized without adversely affecting operations at adjacent intersections (Hesperian Boulevard/Sleepy Hollow Avenue and Hesperian Boulevard/Tennyson Road).

Alternative #1 has the advantage of allowing all turning movements and not diverting traffic. Other than cost savings, the consultant notes that there is basically no advantage to signalizing just the southbound left-turn and northbound through movements.

Alternative #3: Refuae area for westbound Aldenaate left turns (Page C5):

Alternative #3 would require modifying the median on the south leg of the intersection to create a refuge area, so that drivers attempting a westbound left turn only have to cross one direction of Hesperian Boulevard traffic at a time. This alternative would allow drivers to safely wait for gaps in traffic to proceed with a left turn. The alternative would require removing a portion 'of the existing median, and removing the U-turn pocket from the south leg of the intersection. A two-way left-turn lane can be used for the refuge area to allow for the U-turn. It was noted that drivers would need to make their left turn in two moves (first into the refuge lane, then into the southbound lane), as opposed to trying to make the turn all at once. From their experience, the consultant noted that drivers in the East Bay do not seem comfortable with this type of lane configuration and typically do not use the refuge area.

Discussion. of Alternatives (Continued)

ALTERNATIVE #4: LEFT-TURN PROHIBITION FOR WESTBOUND ALDENGATE (PAGE C6):

This alternative is similar to Alternative 2, but without the partial signal. A 'RIGHT TURN ONLY' sign would be installed; a median island would need to be installed on Hesperian Boulevard, and a "pork chop" island would need to be installed on Aldengate Way to discourage drivers from attempting a left turn. This alternative can be implemented with Alternative #5, which is discussed below.

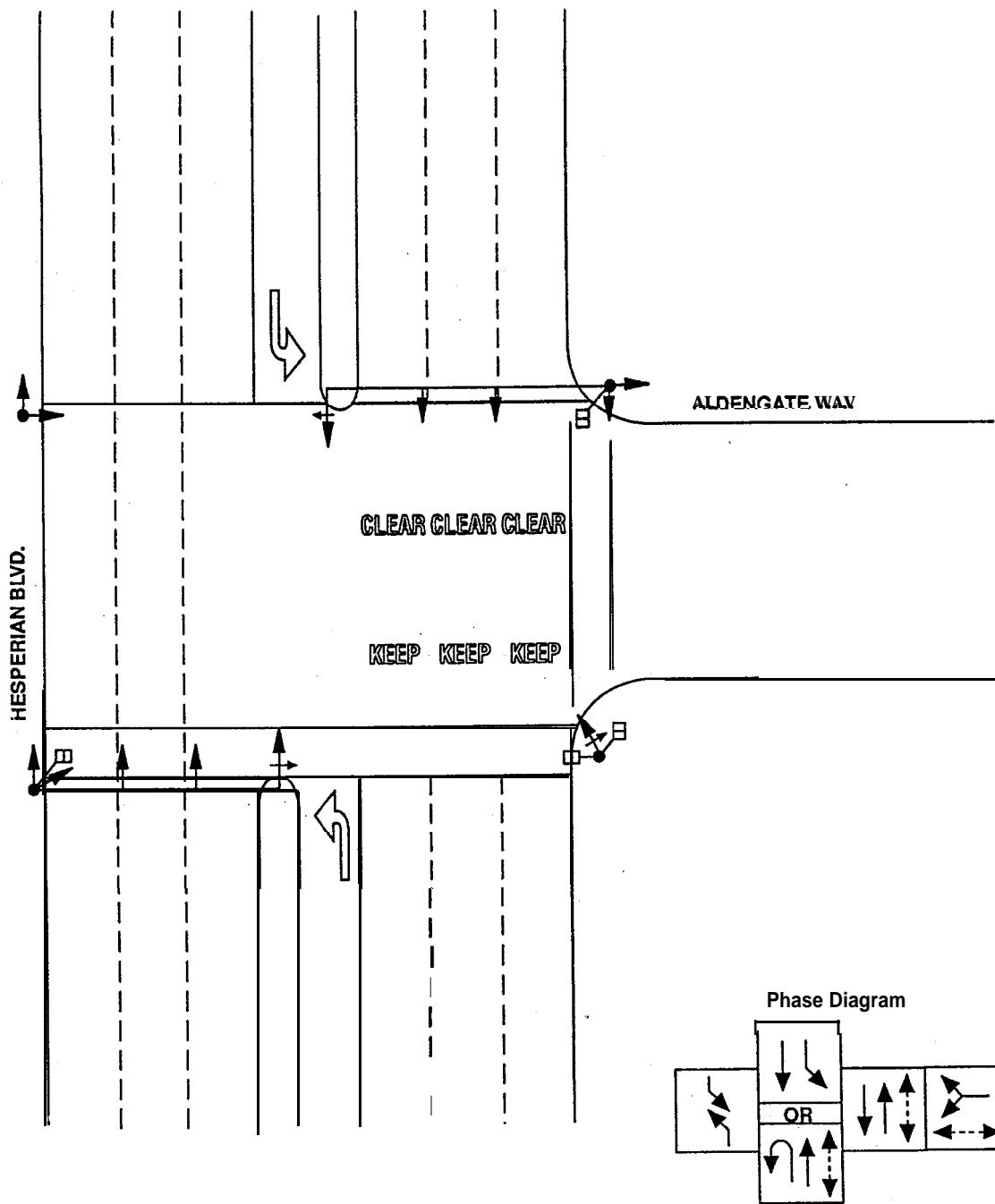
Since the consultant estimates that there are only an average of 250 daily left turns, the impact on traffic diversion is not anticipated to be a major problem.

ALTERNATIVE #5: STAGGERED LIMIT LINE FOR NORTHBOUND HESPERIAN BOULEVARD (ALSO SHOWN ON PAGE C6):

To allow drivers attempting a southbound left turn on Hesperian Boulevard to better see the three lanes of traffic on northbound Hesperian, the limit line on northbound Hesperian can be staggered through a striping modification. This modification would involve the addition of a limit line ten feet back from the existing limit line on the center lane of northbound Hesperian. The alternative would require drivers to voluntarily comply with this new limit line.

ALTERNATIVE #6: PEAK-HOUR LEFT TURN PROHIBITION FOR SOUTHBOUND HESPERIAN BOULEVARD:

Since a majority of the left turn accidents from southbound Hesperian occurred in the evening peak period (4 – 6 PM), a time limited left turn prohibition was also considered. Being implemented only by signage, a peak hour left turn prohibition would require additional police enforcement. The consultant estimates that about 500 trips per day would need to be diverted, and most would become U-turns at Tennyson Road. While implementation of this alternative would address the issue of southbound Hesperian Boulevard left-turn accidents in the peak hour, its effectiveness without significant enforcement is doubtful.



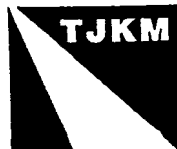
LEGEND	
•	Pedestrian Head
▶	Signal Head
⬅▶	Left Turn Head

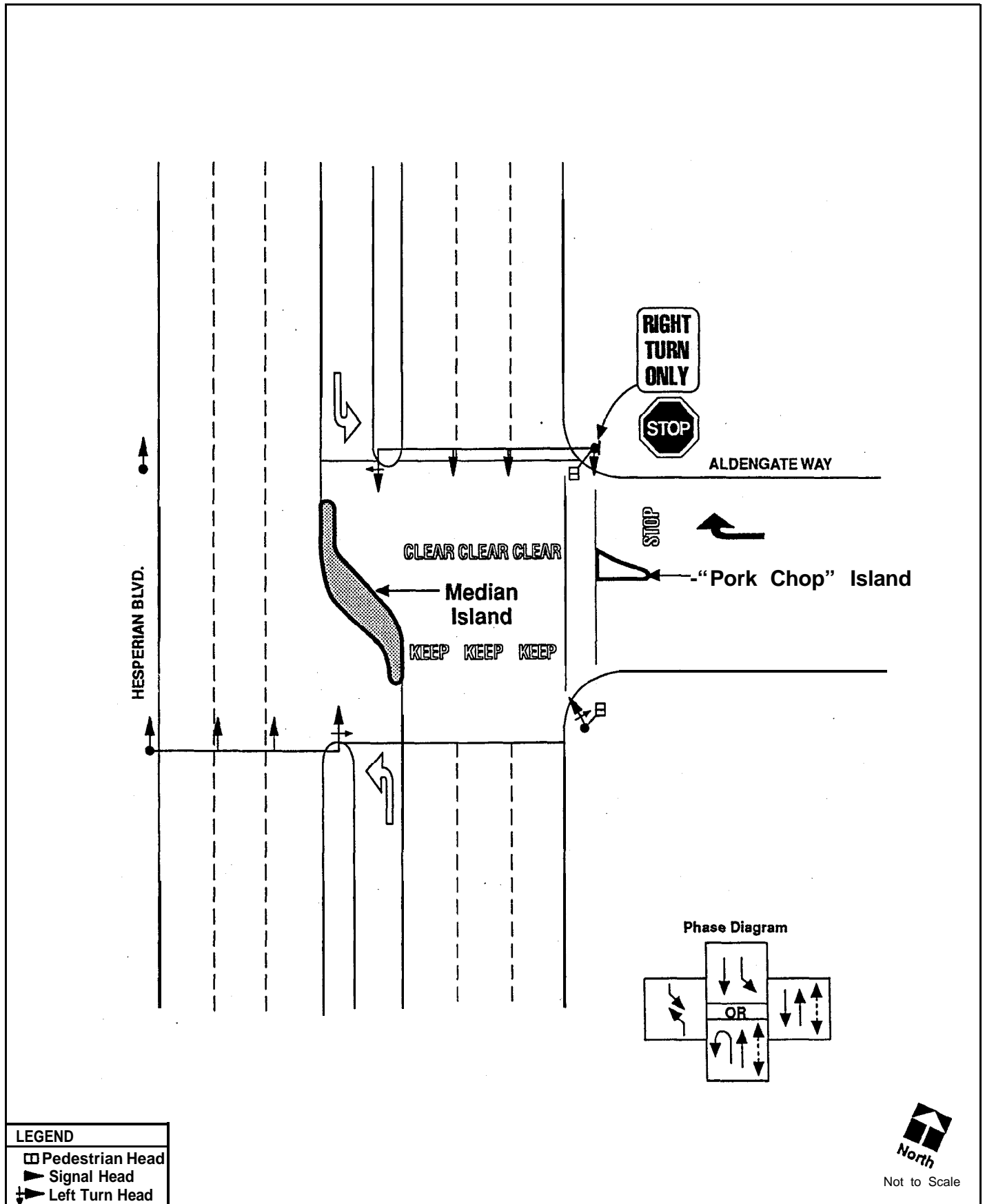


City of Hayward
Hesperian Blvd./Aldengate Way Traffic Control Study
Alternative 1: Signalization of All Movements

Figure

2

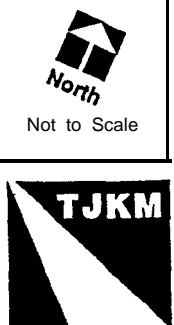


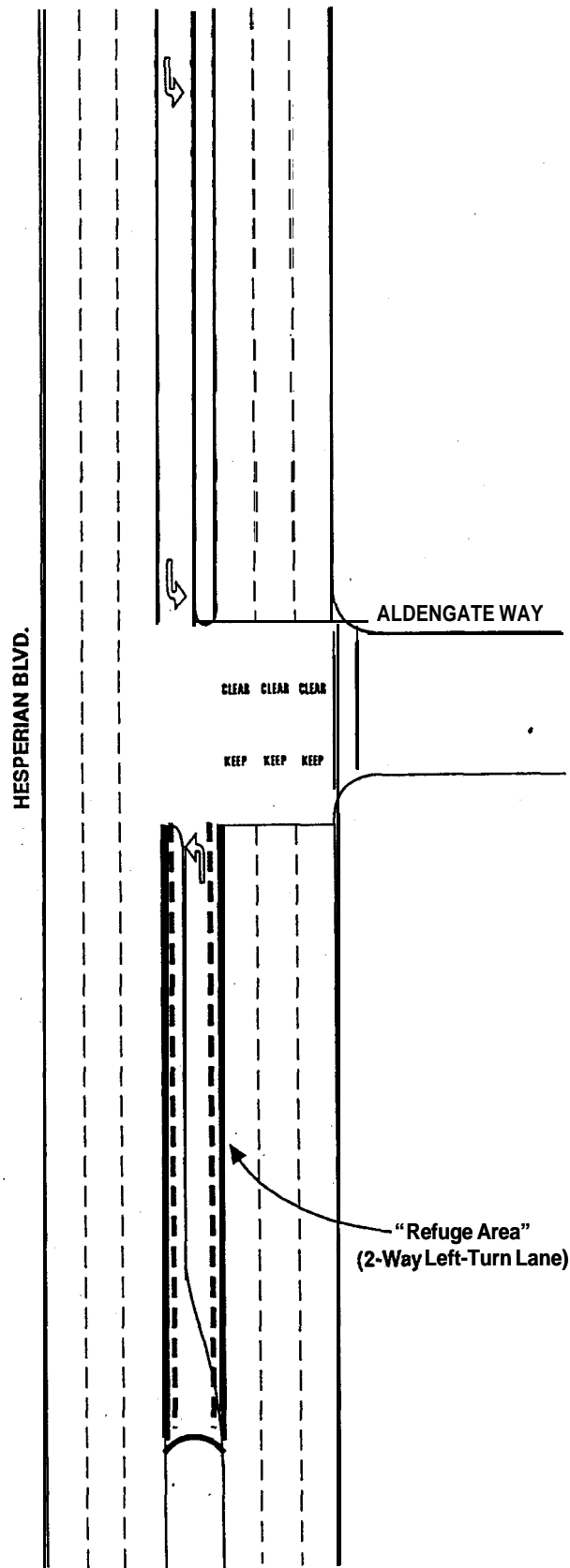


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Alternative 2: Signalization of SB L/T & NB Movements Only **3**

Figure





LEGEND
Proposed

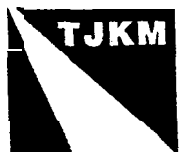


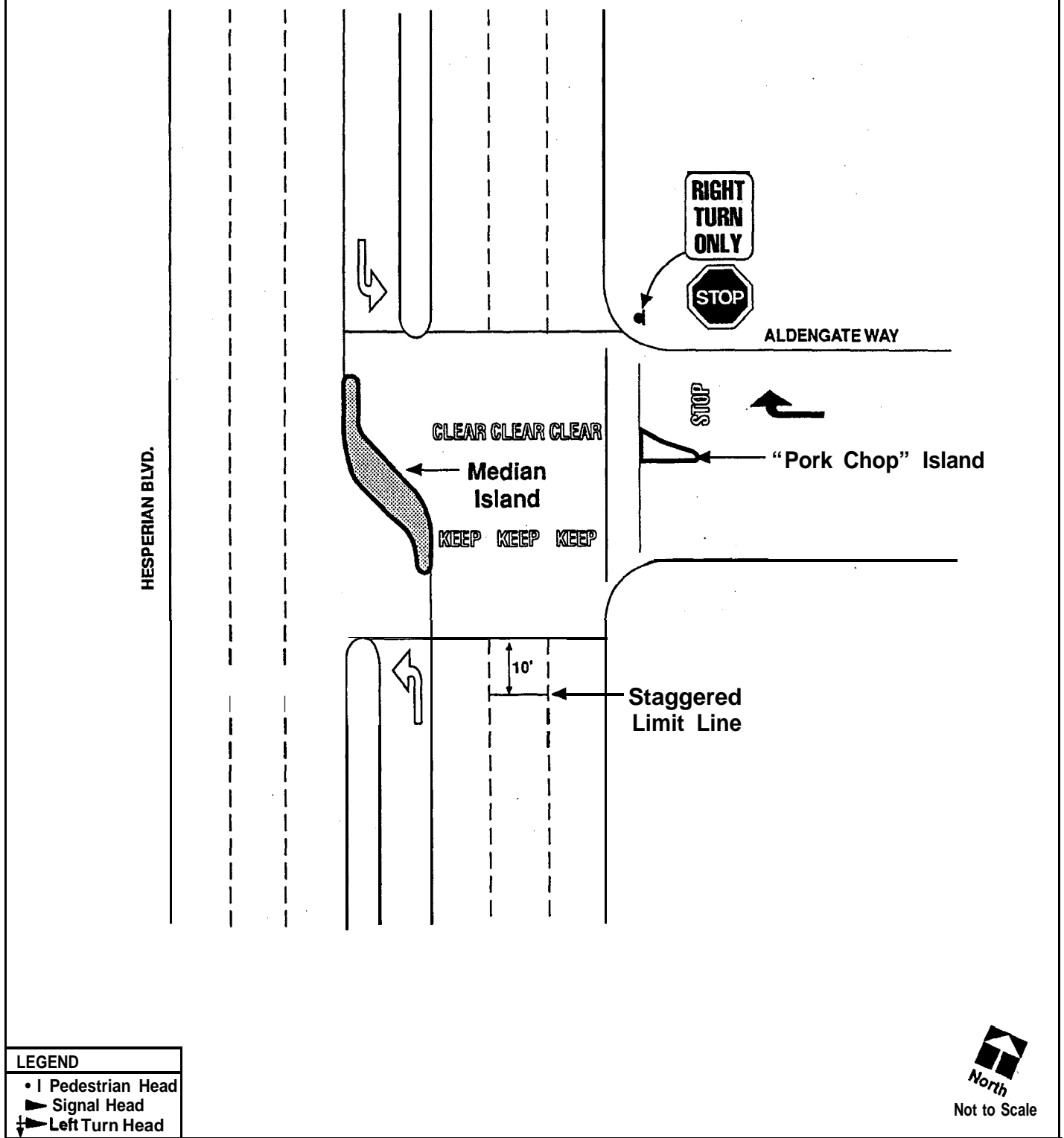
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Alternative 3: Refuge Area For Westbound Left-Turns

Figure

4



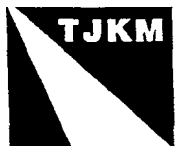


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Alt. 4 & 5: WB L/T Prohibition & Staggered Limit Lines

Figure

5



DRAFT ab 11/5/18

HAYWARD CITY COUNCIL

RESOLUTION NO. _____

Introduced by Council Member _____

RESOLUTION APPROVING THE INSTALLATION OF A
TRAFFIC SIGNAL AT HESPERIAN BOULEVARD AND
ALDENGATE WAY

WHEREAS, the City received approval for a federal Hazard Elimination Safety grant of \$150,000 for design and installation of a traffic signal at the intersection of Hesperian Boulevard and Aldengate Way, which project is included in the adopted 1998/99 Capital Improvement Program; and

WHEREAS, City **staff** contracted with **TJKM** Transportation Consultants to develop signalized and non-signalized alternatives for this intersection, and City staff together with residents of the area recommend full signalization as the best solution to the traffic problem.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Hayward hereby authorizes the installation of a full signalization traffic signal at Hesperian Boulevard and Aldengate Way.

IN COUNCIL, HAYWARD, CALIFORNIA _____, 199s

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
City Clerk of the City of Hayward

APPROVED AS TO FORM:

City Attorney of the City of Hayward